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scil Vet ABC Plus™ Hematology Analyzer Operations Manual



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1. Software Overview

1.1 Important Menu Buttons

1.1.1 Status Button

The 'Status button' in the upper right corner informs the user on the general status of the instrument by changing its colour.



Instrument status:

Status	Color	Description
	Green	The instrument is running correctly.
	Orange	An alarm has been raised but does not lock the instrument. Analysis can be run.
	Red	An alarm has been raised and locks the instrument. Analysis cannot be run except QC.

The 'Status button' blinks when a new alarm is raised. Press

to open the screen 'Status'. In the menu 'Status' you will find information about the general situation of the instrument, messages and actions to correct alarm messages.



Further information for the status situation can be found in the chapter **Troubleshooting** starting on page 13_1.

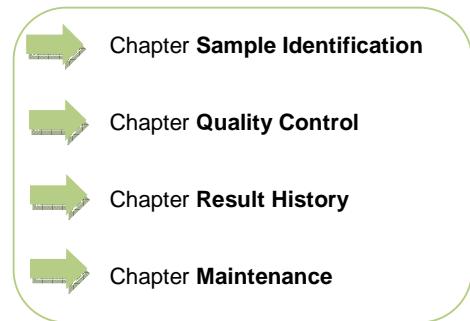
1.1.2 Menu Access Buttons

The menu access buttons are located on the light-hand side of the screen. These buttons allow the user to access the main functions of the system. When a menu is selected, the active button is marked by a yellow line.



Function of the menu access buttons

Button	Name	Action
	Sample identification	Launches "Sample identification" menu
	QC	Launches "Quality control" menu
	Result history	Launches "Result history" menu
	Maintenance	Launches "Maintenance" menu

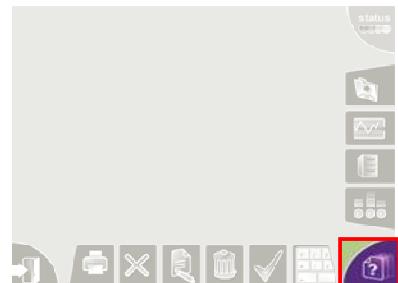


1.1.3 Contextual Help

The button **Contextual Help** opens the help file corresponding to the current screen.

If no help topic is available, the following message is displayed:

No help available for this screen.



1.1.4 Contextual Toolbar

The contextual toolbar is located at the lower part of the screen. It contains action buttons that are related to the displayed screen. Depending on the activated screen, the symbols and the functions can vary in the toolbar.



Action Button Description:

Button	Name	Function
	Edit	Edits/modifies data
	OK	Confirms an action
	Cancel	Cancels an action
	Reset	Resets the entered fields (sample identification, archives status, etc.)
	Delete	Resets the entered fields (sample identification, archives status, etc.)
	Back	Deletes the selected item (user account, reagent, etc.)
	View	Displays additional information
	Internal Keyboard	Access to the internal keyboard (see chapter Internal Keyboard)
	Printer	Prints data (e.g. findings, settings)
	Send	Sends data
	Import	Import of an archive with the USB flashdrive (see chapter Archive)
	Complete export	Complete export of an archive to the USB flashdrive (see chapter Archive)

	Partial export	Partial export of an archive to the USB flashdrive (see chapter Archive)
	Species selection	Selects species (see chapter Species Management)
	Import species	Import new species from the USB flashdrive (see chapter Species Management)
	Species order button	Orders and selects species (see chapter Species Management)
	Default species button	Defines default species (see chapter Species Management)
	Replace button	Replacement of reagents (see chapter Reagent Replacement)
	Prime button	Primes all reagent of the pack (see chapter Reagent Replacement)
	Start cycle button	Starts a maintenance cycle (see chapter Maintenance)
	Control importation	Import of QC target values from the USB flashdrive (see chapter Quality Control)
	Levy-Jennings-access	Displays the Levy-Jennings Curves (see chapter Quality Control)
	QC-result history	Displays the History of QC results (see chapter Quality Control)
	Target button	Enters target values of the quality control (see chapter Quality Control)
	Calibration creation	Runs a calibration (see chapter Quality Control)
	Driver import	Imports a driver of an external printer
	Create new user	Sets up new user profile.

1.1.5 Exit Button

The Exit button  is located on the lower left corner of the screen.

Press the button if you want to perform one of the following tasks:

- Change the logged in User
- Change the user profile
- Restart
- Turn off the instrument



1.2. Dialog Box / Information Screen

Various dialog boxes / information screens inform the user about events (current situation, errors, confirmation, etc.) or about the next action to perform. Dialog boxes must be closed prior to any further action.

Dialog boxes are composed of:

- an icon
- a message
- action buttons



Dialog box icons description:

Button	Name	Description
	Information	Displays an information message: Press "OK" button to close the dialog box.
	Action	Press "OK" button to confirm.
	Confirmation	Ask user confirmation for an action: Press "OK" button to continue or "Cancel" button to cancel the action.
	Error	Displays an error message: Press "OK" button to close the dialog box.
	Warning	Displays a warning message: Press "OK" button to close the dialog box.

Function of the dialog box action buttons

Button	Name	Function
	OK button	Confirms an action and closes the dialog box
	Cancel button	Cancels an action and closes the dialog box
	Emergency stop button	Stops a cycle in progress

1.3 Fields with Options to Choose

1.3.1 Check Box

Check boxes allow to activate or de-activate software options.

There are two options:



Active



Inactive

To use the check box, the application must be in edition mode: If

not, press

1.3.2 Combo Box

A combo box is composed of a field and up and down buttons. The user can scroll between a list of values defined for the combo box.



1.3.3 Radio Button

Radio buttons allow the operator to select a software option (single choice):

There are two options:



Active



Inactive

1.3.4 Text Field

Text fields allow to type alphanumerical characters and numbers.



Edit the text field by pressing it. To use the check box, the application must be in edition mode: If not, press .

1.4 Specific Keys of the Internal Keyboard

The internal keyboard  has the same functions as a generic one and allows users to enter values in the text field (only capitals). The navigation within the text field is performed by using special buttons.

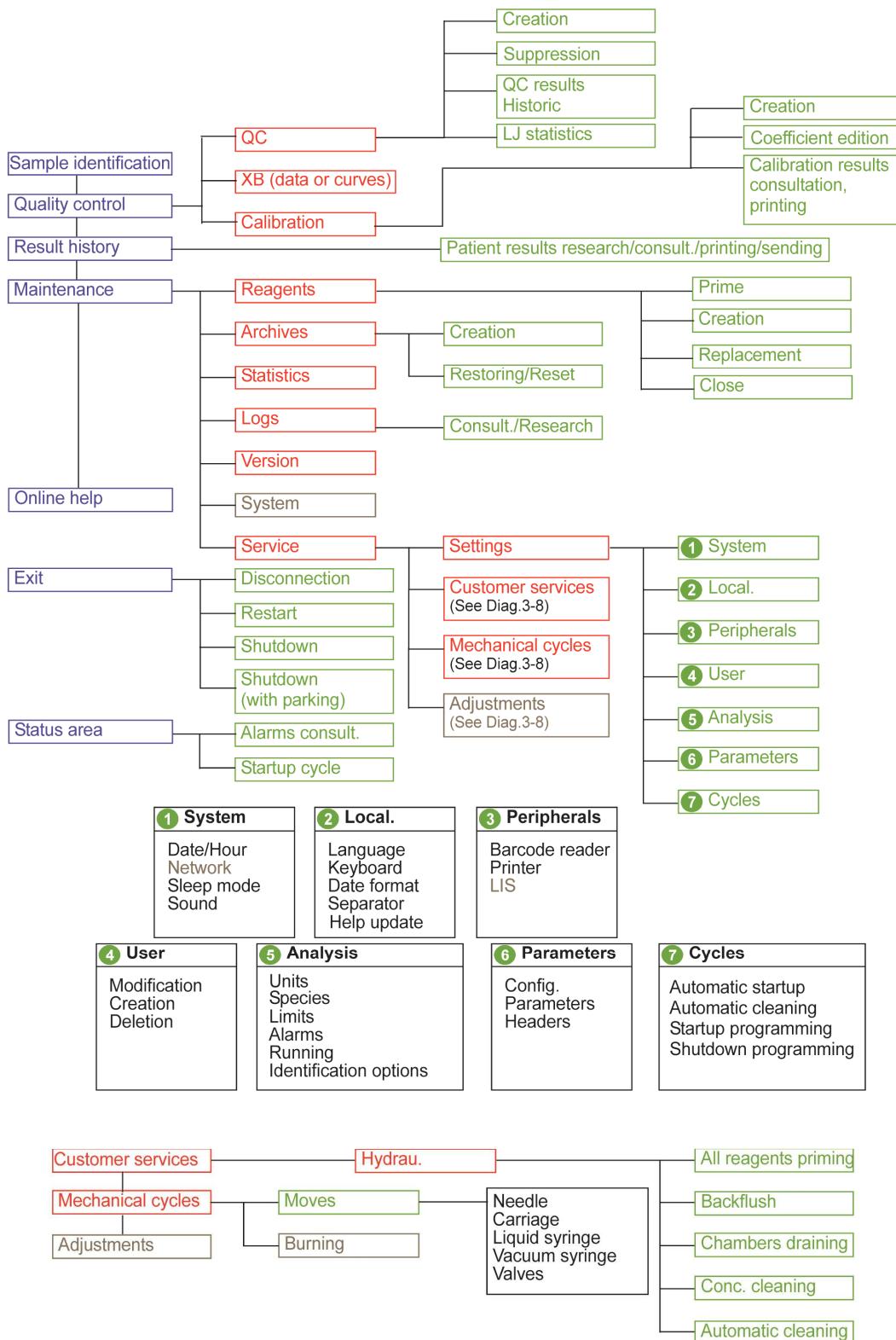


Description of the Internal Keyboard Specific Keys:

Button	Name	Action	Description
	Valid	Validation	It validates entry and moves to the next text field.
	Delete	Deletion	Delete entries.
	Previous	Navigation	It moves the pointer backward (to the left) in the selected text field. [Only for sample identification]
	Next	Navigation	It moves the pointer forward (to the right) in the selected text field. [Only for sample identification]
	Close	Closing	It closes virtual keyboard and returns to previous screen.

2. Menu

2. Menu



3. User Identification

3.1 User Profile

There are two different user profiles available to work with the scil Vet abc Plus⁺:

- **User profile “VET TECH”** to run an analysis. It is optional to password protect this profile for individual users.
- **User profile “SCIENTIST”** to run analysis, and manage the system. This profile is password protected.

Other profiles are reserved for scil service technicians.

Overview of the available functions according to the user profiles:

User profile	User actions
	VET TECH Instrument start-up and shutdown, running analysis, running QC analysis, printing and sending patient results, species management, managing of maintenance steps, printer settings, saving QC, log and patient data, displaying online help.
	SCIENTIST Same access rights as VET TECH plus the following additional rights: Saving and restoration of settings, saving and restoring of instrument adjustments, managing calibration.

3.2 Selection of a User Profile

After the instrument is switched on, log in to the system is requested.

1. Select the user profile by pressing the corresponding icon.
2. Select “New Session”.

A new series of measurements is started by selecting New Session and the previous session is saved in the archive **Analysis**.

3. If you want to log-in as “SCIENTIST”, a user password is requested:

Preset Password: 3601.

4. Press to enter.



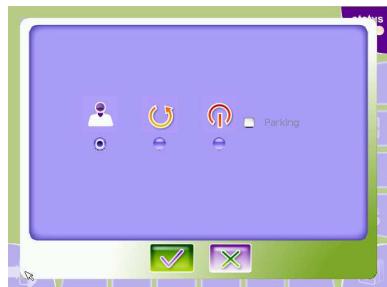
3. User Identification



3.3 Modification of the User Profile

1. Press .

The following screen is displayed:



2. Press to select a new user profile.

The following screen is displayed:



3. Select the user profile by pressing the corresponding icon.
4. Select "New Session".

A new series of measurements is started by selecting "New Session" and the previous session is saved in the archive "Analysis".

5. If you choose to log-in as "SCIENTIST", a user password is requested:

Password: 3601.

6. Press to enter.

4. Setup

4.1 Setup of the Instrument

1. Switch on the instrument by pressing the on/off button at the back of the analyzer.

The scil Vet abc Plus⁺ performs a warm-up cycle and continues automatically to the start-up cycle.

During the start-up cycle all mixing chambers and tubes are rinsed. Afterwards a blank cycle will be performed to check and verify the reference blank limits.

2. The instrument displays and prints the blank cycle results.
3. Press  to enter and quit the result screen. The different user profile options are shown in the display window.
4. Select a user profile by pressing the appropriate icon.
5. A log-in screen is displayed. Select the option “New Session” by activating the check box.

If you log in with the profile VET TECH, it is not necessary to enter a password.

For each “SCIENTIST” profile connection, a password will be required. Enter the password by using the internal keyboard.

Password: 3601

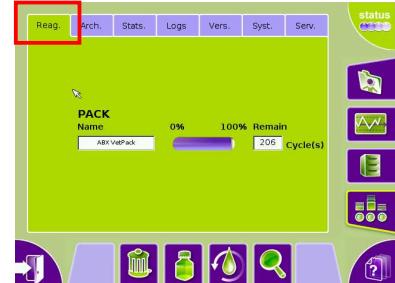
6. Press  to enter.



4.2 Install a New Reagent Pack

1. Press the button for “Maintenance” .
2. Select the reagent tab “Reag”.
3. Press  in the toolbar to change the reagent pack.

The following message is displayed:



“Are you sure you want to replace this reagent / pack?”

4. Press  to confirm.

The “Edit Reagent” screen is automatically displayed.

5. Remove the 4 red reagent protection caps from the bottom of the reagent pack and the red waste connector tab from the top of the reagent pack.
6. Place the pack in the compartment of the instrument.
7. Plug the waste connector to the connector site on the top of the pack.
8. Press  to enter the input mode.
9. Open the internal keyboard by pressing the button .
10. Enter the LOT number from the reagent pack by using the internal keyboard. It is located on the side of the pack facing out.
11. Press  to enter.
12. Press  to prime all reagents. The scil Vet abc Plus⁺ performs the reagent priming automatically. This cycle takes approx. two minutes.
13. Select one of the main menu buttons to quit the “Reagent Replacement” menu.

5. Analyze

Select the menu option “Analyze” by pressing the main menu button “Sample Identification”.

The following screen is displayed:



5.1 Running a Measurement

1. Press to open the internal keyboard.
2. The sample ID is generated automatically by the instrument. The ID number is displayed in the “Sample ID” field. The sample ID is composed of the prefix **AUTOSID** and the sequential number of each identification.
3. Press “Animal ID” to enter the identification number of the animal by using the virtual keyboard.



Optional data can be keyed in, such as animal name, owner name, date of birth of patient. This data will be saved under the animal ID.

Press to validate each field; the next field is automatically selected.

If a measurement of the same animal ID is required later, all the demographic information of the animal is automatically displayed in the “Sample Identification” fields.

4. Once you have completed, press to close this menu and return to the “Analyze” menu.
5. Press to select species. The “Species Selection” screen is displayed. Select desired species by pressing the corresponding species button.

5. Analysis



6. Run a measurement by pressing

The dialog box “Sample Analysis” is displayed, which gives further information to run the analysis.

Reference cycle

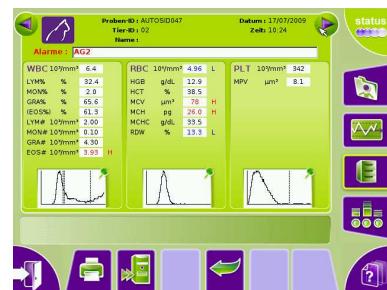
If more than 10 minutes are between two measurements, a dialog screen with following demand is showed up

“reference cycle necessary“

Confirm with the sample button to start the reference cycle. After finishing this cycle, the sample needle is move out from the analyzer.

7. Mix the EDTA-sample gently and thoroughly and remove the cap from the sample tube.
8. Place the sample beneath the sample needle and press the sample bar. The instrument is aspirating 10 µl of blood. Do not remove the sample tube before the aspiration is completely finished and the needle is drawn back in the analyzer. During the analysis, the screen “Sample Analysis” is displayed.

When the analysis is completed, the results are displayed on the screen, printed out automatically and transferred to the lab software.

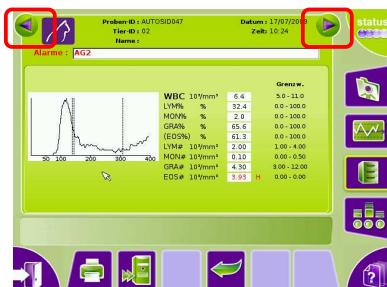


The results are displayed on the screen “Result Display”.

The first page shows an overview of all components of the results including histograms and alarms.

To display detailed results of one parameter, press the corresponding histogram area.

Use the buttons “back” and “forward” to navigate between detailed result screens.



9. Press to go back to the “Result Display” screen.

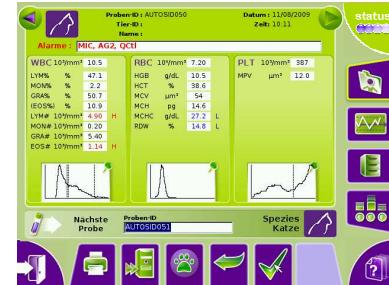
10. Press the main menu button “Sample Identification” to enter data for the next measurement.

Performing a Serial Measurement

It is also possible to run serial measurements without entering the animal ID.

Press  in the result screen.

The sample needle of the scil Vet abc Plus⁺ drops down and is ready for the next measurement. To mark the test, a continuous “AUTOSID” number is assigned.

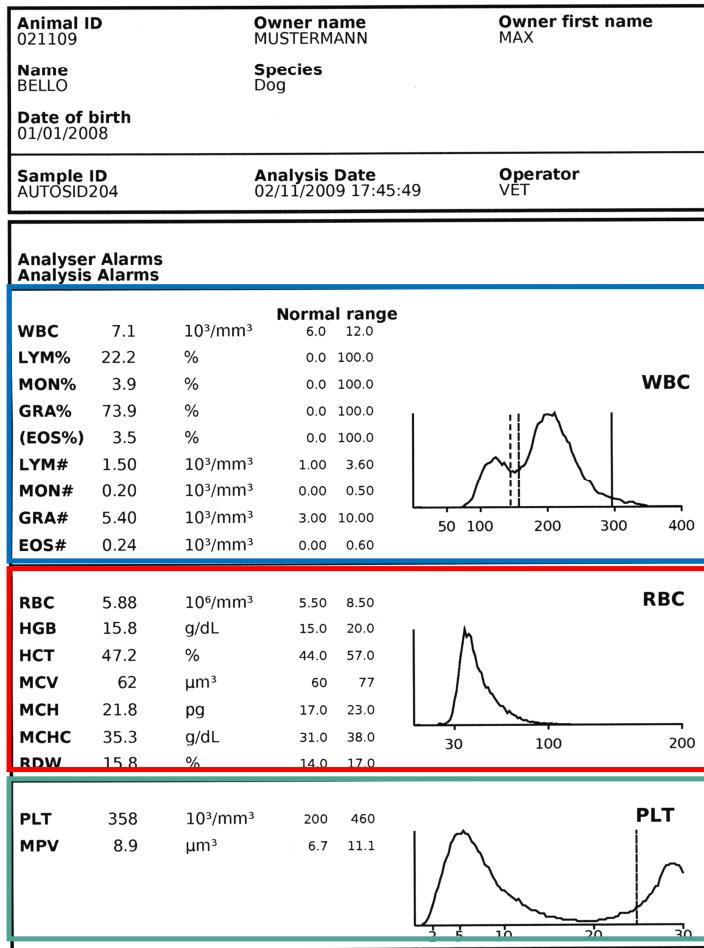


6. Results

6. Results

6.1 Printout of Results

RESULT



Printed on 02/11/2009 17:53:24

Printed by VET

Scil vet abc plus N° 904EVOH00064

- Leukocyte Parameters
- Erythrocyte Parameters
- Thrombocyte Parameters

6.2 Parameters

6.2.1 Parameters of the White Blood Cell Count Including Differentiation

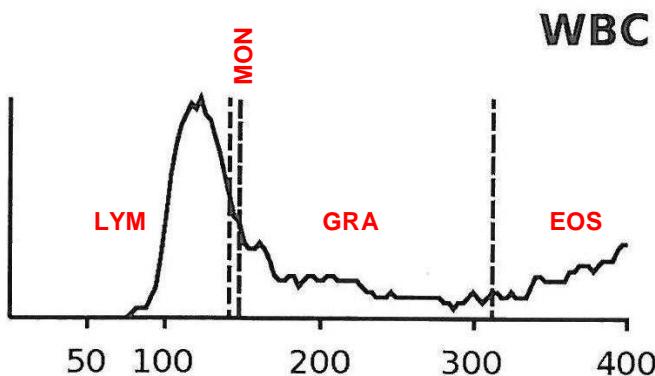
WBC Total numbers of Leukocytes

Differentiation of the Leukocytes:

% LYM Relative number of lymphocytes
% MON Relative number of monocytes
% GRA Relative number of granulocytes
(Neutrophil, Eosinophil, Basophil)
% EOS Relative number of eosinophil granulocytes

LYM Absolute number of lymphocytes
MON Absolute number of monocytes
GRA Absolute number of granulocytes
(Neutrophil, Eosinophil, Basophil)
EOS Absolute number of eosinophil granulocytes

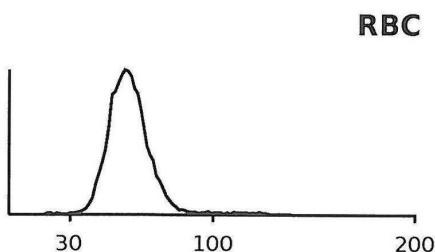
Leukocyte Histogram:



6.2.2 Parameters of the Red Blood Cell Count

RBC	Total numbers of leucocytes erythrocytes
HGB	Hemoglobin
HCT	Hematocrit
MCV	Mean Cell Volume
MCH	Mean Corpuscular Hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
RDW	Red cell distribution width

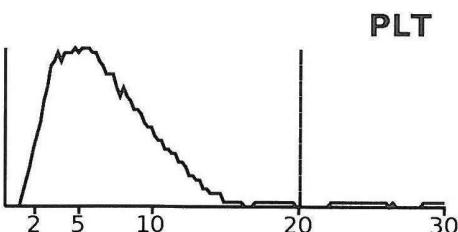
RBC Histogram:



6.2.3 Thrombocyte Parameters

PLT	Total number of thrombocytes
MPV	Mean Platelet Volume

PLT histogram:



6.3. Result Management

6.3.1 Access the Saved Results

Open the menu “Archive Results” via the main menu button “Archive Results”.

In the menu “Archive Results” you can display the results of the current session or in the internal archive of the instrument the data of the previous analysis:

- To display the current session, press the radio button: **Current Session**.
- To display the previous session, press the radio button: **Archive Results**.

The results will be sorted by date and time.



Date (DD/MM/YYYY)	Sample ID	Animal ID	Owner name
25/03/2009 15:00	56		
25/03/2009 10:26	444		
25/03/2009 14:32	60847.8		
25/03/2009 14:30	60847.7		
25/03/2009 14:26	61015.8		
25/03/2009 14:22	61015.7		
25/03/2009 14:19	59669.12		

The four arrow buttons allow the user to scroll between table lines and pages.

Button	Name	Description
	Up	Scrolls the upper line of the table.
	Down	Scrolls the next line of the table.
	Page up	Scrolls the previous page of the table.
	Page down	Scrolls the next page of the table.

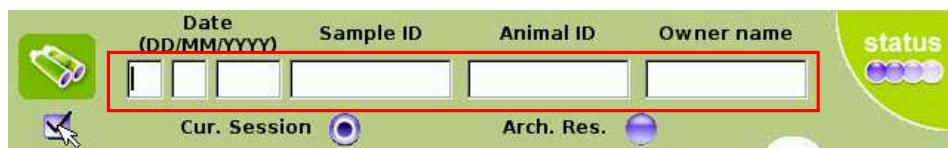
6. Results



6.3.2 Searching for Saved Results

1. Results can be filtered by 4 different criteria:

- o Date of the analysis
- o Sample ID
- o Patient ID
- o Name of patient owner



2. Press the radio button to activate the filter function.
3. Activate the field “Current Session” to search the results of the current test series.
Select “Archive Results” to search in the internal archive of the instrument.
4. Enter date, sample ID, patient ID or patient owner name for the test you are searching.
5. Press the Filter button to start searching in the archive.
If there is only one saved result matching the filter criteria, the following screen is displayed:



6. Press to view the results.

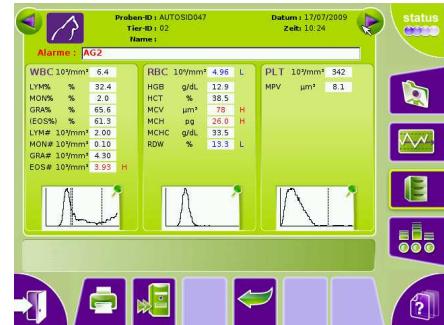
6. Results

If there are several results matching the filter criteria, the following screen is displayed:



The saved results are sorted by date / time and sample ID.

7. Select the result with the arrow buttons.
8. Press  to view the selected result.



By using the arrow buttons  and  you can switch between the different results.

6.4. Sending Results

6.4.1 Sending / Transfer of Results

The scil Vet abc Plus⁺ is programmed to print and send results to the lab software automatically.

The automatic transfer is blocked when one of the following flags or alarms is activated:

Alarms:

- **QCtl** (QC time interval limit exceeded)
- **QCi** (invalid QC)
- **STi** (invalid startup)
- **T⁰** (reagent temperature problem)
- **Rex** (reagent expired)

Flags:

- \$
- !
- *
- D

Results marked with these alarms and flags must be approved and released by the user and sent to the lab software manually.



Information on how to send data manually can be found on page 6_8

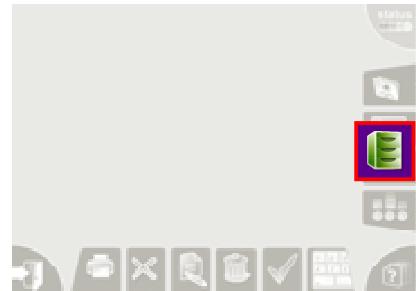
6. Results

6.4.2 Resending Results

The data transfer buttons allow resending of the data to peripheral equipment like printers or a Lab Information System (LIS). The results transferred to the LIS are automatically transferred to your lab software.

6.4.3 Resending Saved Results

1. Select the menu “Archive Results”.
- The following screen is displayed:

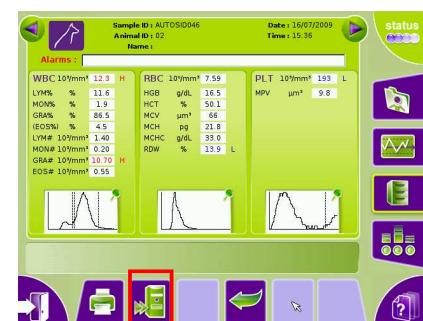


2. Select the result you want to resend to the LIS from the list via the arrow buttons.

3. Press  to display the result.

4. Press  to resend the results.

The connection to the lab software will be established and the result will be send.

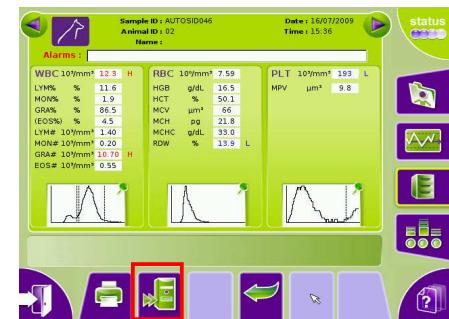


6. Results



6.4.4 Resending of Results directly after the Analysis

1. Press to resend the results.



6. Results

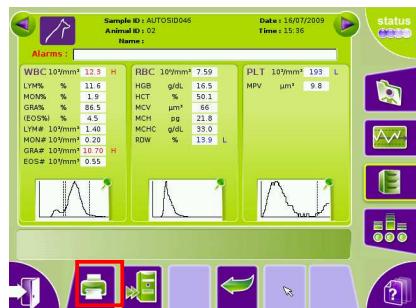
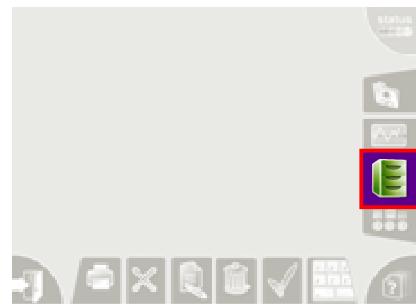
6.4.5. Reprinting Saved Results

- Select the menu “Archive Results” with the main menu button.

The following screen is displayed:

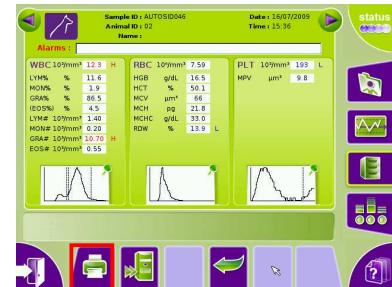


- Select the result you want to reprint from the list with the arrow buttons.
- Press  to display the results.
- Press  to reprint the selected results.



6.4.6. Reprinting of Results directly after the Analysis

1. Press  to resend the actual results.



7. Alarms

The scil Vet abc Plus⁺ includes an extensive range of internal quality control functions. The instrument reports results with abnormalities with flags and alarms and provides important additional information to the user.

Alarms are shown in the line "Alarms" in the screen "Results".



In addition, you may find alarms in the field "Instrument Alarms / Analysis Alarms" on the result printout..

7.1 Instrument Alarms

Results of the scil Vet abc Plus⁺ may contain the following alarms:

Alarm	Cause	Recommended action
STi	Invalid startup cycle	Repeat the startup cycle.
T°	Reagent temperature is outside the range of operating temperature	The reagent temperature should be between 64°F/18°C and 77°F/25°C. Operate the scil Vet abc Plus ⁺ at appropriate room temperatures. In the event of cold weather conditions, store the reagent pack for 24 hours at room temperature to warm up the reagents before using. If the alarm remains, please contact scil technical service.
Rex	Reagent pack expired	Replace the reagent pack.

Note:

There will not be an automatic transfer of data to the software in presence of STi, T° and Rex alarms.

7.2 QC-Alarms

Display	Alarm	Cause	Recommended action
Qci.	Invalid QC	At least one QC parameter is out of valid limits.	Run a new quality control.
XB	XB Drift	One of the XB parameters is out of the valid limits. or Less than 20 XB results were evaluated so far.	Contact scil technical service. This alarm is not shown any longer if enough results are evaluated.
QCtl.	Internal QC time limit	The time limit between two QC measurements is elapsed.	Run a control.

Note:

There will not be an automatic transfer of data to the software in presence of QCi. and QCtl. alarms.

7.3 General Information about Parameters Flags

H The result is above the reference range for the species.

L The result is below the reference range for the species.

The scil Vet abc Plus⁺ always performs two measurements per sample. If the results for a single parameter differs too much (exceeds precision limits), a third measurement is performed automatically.

\$ If a parameter is flagged with this symbol, the instrument has performed a third measurement. The difference of two of the three measurements is within the precision limit for that parameter within the system.

The result is acceptable and can be used.

Note: there is no automatic transfer of the data to the software; it must be released by the user.

***** If a parameter is flagged with this symbol, the instrument has performed a third measurement. All three values are outside the precision limits for this parameter. The result cannot be used. A new test must be performed. If this flag is still shown, we recommend running a new measurement with a fresh sample.

Note: there is no automatic transfer of the data to the software; it must be released by the user.

! An exclamation mark close to the HGB result means the difference between the measurement of the previous HGB blank value and the current blank value is too high. The result can be used; however, if this sign is displayed three times in a row, a new startup should be performed.

Note: there is no automatic transfer of the data to the software; it must be released by the user.

- D** D or DIL behind a result shows that the range of linearity is exceeded for this parameter. The result is displayed.

Note: there is no automatic transfer of the data to the software; it must be released by the user.

Recommended action:

1. Dilute a part of the whole blood sample 1:1 with physiological saline, mix well.
2. Test the diluted sample.
3. Multiply the result by factor 2.

7.4. Alarms Related to the Thrombocyte Distribution Curve

MIC The MIC flag is triggered when cells are present in the area of delineation between thrombocytes and erythrocytes.

Possible causes:

- Platelet clumps (mainly with cats)
- Microcytes

SCH The SCH flag is triggered when cells are present in the area of delineation between thrombocytes and erythrocytes.

Possible causes:

- Platelet clumps (mainly with cats)
- Schistocytes (deformed and fragmented erythrocytes)

SCL The SCL flag is triggered when small particles from 2 and 3 fl are detected.

Possible causes:

- Contamination

Procedure:

Run a startup cycle. If the SCL flag is still appearing, please perform a concentrated cleaning.

For information about performing a startup cycle and a concentrated cleaning, refer to “Maintenance” Chapter, pg 12-1.

7.5. Alarms Related to the WBC Distribution Curve

AG1 The AG1 alarm indicates the existence of aggregates in the leukocyte measuring zone.

The alarm appears when the percentage of aggregates is larger than 1.5% of the total leukocytes.

Possible causes:

- Platelet clumps

In the case of the AG1 alarm, the results can be used, but should be evaluated critically in context with the other parameter results.

AG2 The AG2 alarm indicates the existence of aggregates in the leukocyte measuring zone.

The alarm is given when the percentage of aggregates is larger than 2.5% of the total leukocytes.

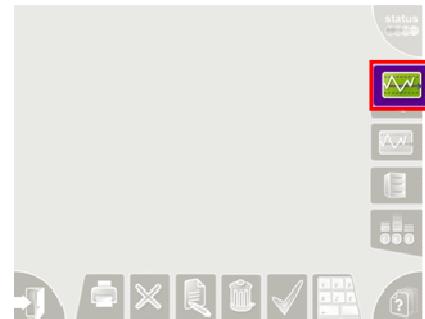
Possible causes:

- Platelet clumps

In case of the AG2 alarm, the total white blood cell count and the differential results can be affected so are not acceptable. Agglutination of platelets can lead to incorrectly high results. The platelet count could be incorrectly low and should be evaluated with a manual smear.

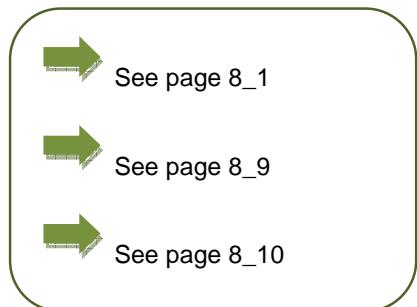
8. Quality Control

Press the “Quality Control” menu button on the right side of the screen to enter the menu “Quality Control”.



The “Quality Control” menu is composed of three tabs:

1. Sub menu “Quality Control Management” (QC)
2. Sub menu “Patient Quality Control” (XB)
3. Sub menu “Calibration”

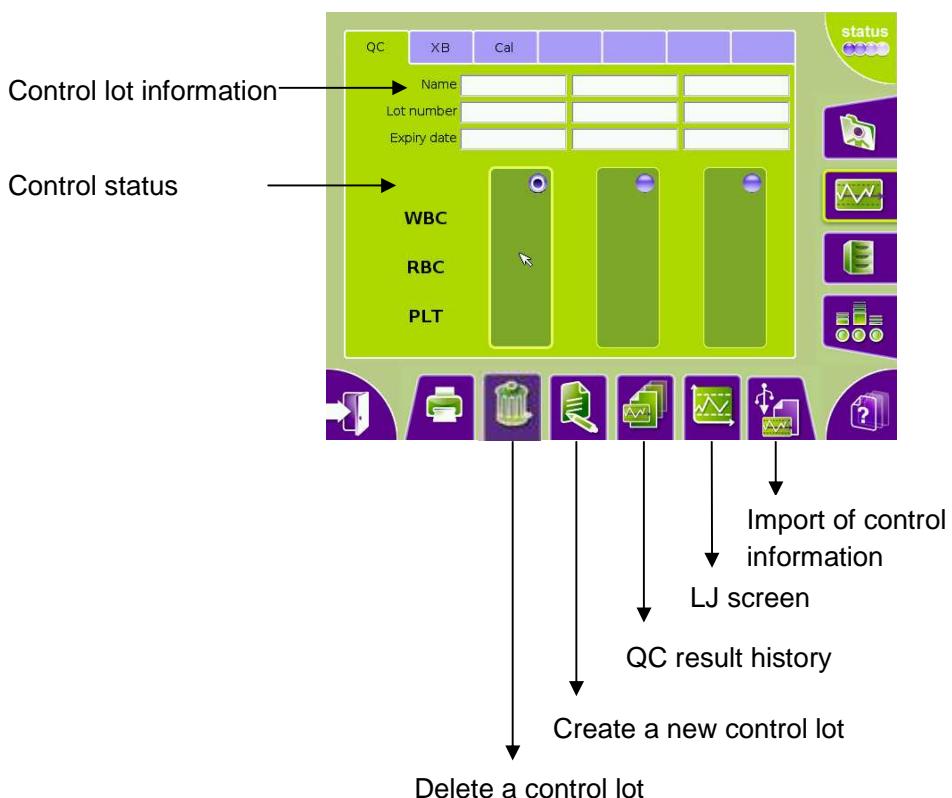


8.1 Sub Menu: Quality Control Management (QC)

In this sub menu you can:

- Analyse quality controls
- Manage quality controls
- Enter target values for quality controls

Open the sub menu “Quality control / QC” by pressing the “QC” tab. The following screen is displayed:



Use only Minotrol as the control with the scil Vet abc Plus⁺.

Minotrol is available in three different measurement ranges (normal, low, high).

The scil Vet abc Plus⁺ target can store target values for up to three different controls.

The target ranges of each quality control can be entered manually or imported via USB key. To import via USB flashdrive, the information must be downloaded from the internet.

8. Quality Control



8.1.1 Download Control Files with Target Value Information

It is possible to download the scil Vet abc Plus⁺ target values from the scil animal care company GmbH website. Two files for each lot number can be downloaded. Both data contains the lot number, the name, expiration date and the target values for the selected control. The control data can be imported to the scil Vet abc Plus⁺ as a .cvs-file. For documentation you can print them out as a pdf file or save them on your PC.

1. Connect to scil animal care company GmbH website:
<http://www.scilvet.com/scilamerica/Downloads.html>
2. Select the file 'scil Vet abc Plus⁺ target values Minotrol'.

A screenshot of the scil Downloads page. At the top, there's a navigation bar with links to Home, Contact, and Imprint. Below that is a banner with the text "Excellence in Veterinary Diagnostics" and images of a horse, a dog, and a cat. The main content area has a heading "Downloads". Under "PC Connecting Software", there are several files listed with their sizes and download links:

	Size	Download
LAD 2.07 - Laboratory and Diagnostics - New version since 12/11/09	12 MB	[USA]
Update: To update LAD 2.0 (or later) to LAD 2.07. Download this file to c:\scil_lad and execute it (e.g. by double click in windows explorer)	2.4 MB	[USA]
Uninstall.PDF - If you have installed a prior version of LAD, please read this.	15 KB	[USA]
First Steps - A short instruction how to setup the software	15 KB	[USA]
Instrument settings - How to setup the different instruments	21 KB	[USA]
Printout - An example of a printout created with LAD	50 KB	[USA]
Demo program for an interface between practice management software and LAD (Please download into c:\scil_lad after the installation of LAD.)	65 KB	[USA]

	Size	Download
scil Vet View V5		
Waveform Viewer	350 KB	[USA]
Waveform Sample	150 KB	[USA]

	Size	Download
Support Tools		
NetViewer oneZone	500 KB	[USA]
scil COM-Port Checker	36 KB	[USA]

3. Select in the matrix 'scil Vet abc Plus⁺ target value Minotrol' the lot number you are currently using (e.g. MX079).
4. Press 'download' and save the data on your Flash drive.

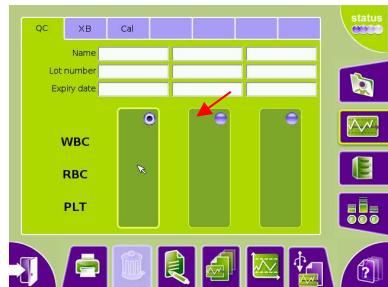
8.1.2. Import of a Control from USB Flashdrive

The file on the USB flashdrive, imported from scil animal care company GmbH website, contains the lot number, name, expiration date and the target values for the related control.

1. Press the “Quality Control” menu button.



2. Press the radio button in one of the green columns to import the information for a new lot of controls into this column. A corresponding storage place will be opened.



3. Press  and insert the USB flashdrive in the front slot of the instrument. The following message is displayed:

*Please insert your USB key into the front slot of the instrument.
Select OK to continue import of QC controls target import.*

8. Quality Control



4. Press to start the import.

The following screen is displayed:



5. Select the control lot to be imported from the "QC Name" list, by using the arrow buttons, then press .
6. When the import is completed, control information is displayed in the "Control Modification Screen".
7. Confirm the displayed data on the screen such as lot number and expiration date matches the data on the product insert.

The scil Vet abc Plus⁺ requires a control measurement every 24 hours. If this request is ignored, an alarm is activated. To avoid this demand, the interval between two QC requests can be set on 9999.

8. Press to open the internal keyboard.
9. Change the internal QC time limit to 9999.
10. Press to confirm.
11. Press to close the screen.
You are returned to the screen "Control Modification".
12. Press to confirm.

8.1.3 Entering Control Target Values Manually

Press to access the “Quality Control” menu.

1. Press the radio button in one of the green columns to import the new control information into this column. An according storage place will be opened. Previous lot information saved at this place will be overwritten.
2. Press to open the screen “Control Modification.”
3. Press to open the internal keyboard.
4. Enter the following data via the internal keyboard:
 - Lot
 - Name of the quality control (e.g. Minotrol-N)
 - Expiry (Day/Month /Year)

Please find the target values of the quality control on the included matrix of target values in the column “scil Vet abc Plus⁺”.

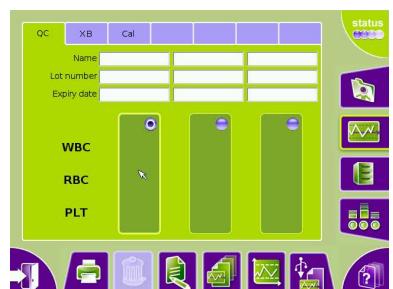
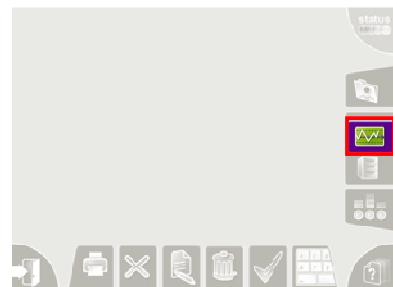
5. Change the internal QC time limit to 9999.

The scil Vet abc Plus⁺ requires a control measurement every 24 hours.

If this request is ignored, an alarm is activated.

To avoid this demand, the interval between two QC requests can be set on 9999

6. Press to enter.
 7. Press to close the screen.
- You come back to the screen ‘Control Modification’.
8. Press to enter.



8. Quality Control



9. Press to enter the target values for the different parameters,

10. Press to access the screen “Target Modification”.

11. Select WBC.

12. Press .

Enter the target values for each parameter with the internal keyboard.

13. Press to enter.

Repeat the steps 12 to 14 for RBC and PLT parameters.

14. Press to quit the screen “Target Modification.”

15. Press to quit the screen “Control Modification.”



8. Quality Control



8.1.4 Analyze a Quality Control

1. Select the screen “Analysis”.
2. Press and select the box “Sample-ID”.
3. Enter the LOT number on the label of the control vial to analyze.

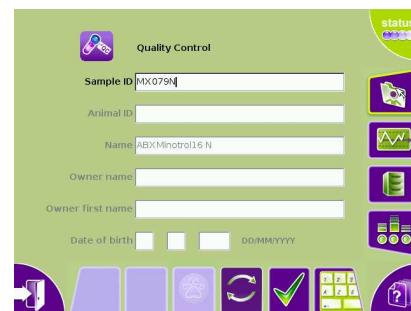
4. Press to enter.

5. Press to quit the screen.

**The scil Vet abc Plus⁺ switches automatically to Quality Control mode.

6. Press to start an analysis.
7. Mix the control solution gently and invert the tube at least twenty times before analyzing the quality control.

Once the QC analysis cycle is finished, the results are displayed on the screen and printed automatically. The results of all analyses are stored in an internal database for quality control analysis. The analyses as well as the patient results can be displayed and printed again as needed.



8.2 Patient Quality Control (XB)

The Patient Quality Control (XB) is used to detect any change in the quality of results by performing statistical analysis of the patient results.

This quality control is performed automatically by the scil Vet abc Plus⁺ and is applied to the three parameters MCV, MCH, MCHC.

In the menu “Settings” limits for the parameters are stored. When a total of 20 results of the standard species are available an XB batch is computed (the mean value of all 20 analyses).

The standard species set as default is “dog”.

To view the saved XB results, enter the main menu “Quality Control” and press the “XB” tab.

The “XB” tab contains two radio buttons for switching between XB curves and XB data screens. The “XB curves” screen is displayed as default.

The XB curves screen contains 3 graph areas, one for each XB parameter.

The XB data screen contains 3 columns, one for each XB parameter. If a parameter result is above the limit, its value is displayed in red.

If a parameter result is below the limit, its value is displayed in blue.



8.3. Calibration

Calibrations are performed and managed in this submenu. The scil Vet abc Plus⁺ is calibrated prior to shipment. scil recommends a Bi-Annual (every 6 months) calibration be performed to keep the machine running at peak performance and precision.

The only way to access this screen is with a “SCIENTIST” profile. Please refer to the “Fast Facts” section near the beginning of the manual at pages **20** and **21** for the calibration procedure and instruction.



9. Archive

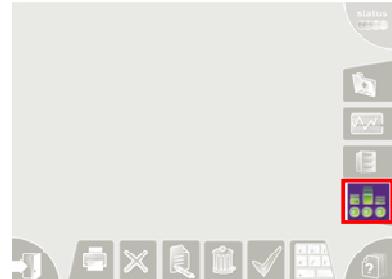
9.1. Archives management

Saved instrument data can be archived in the submenu 'Maintenance / Archive'.

The archives are exported to the USB key included with your system.

Enter 'Maintenance' screen by pressing the according main menu button.

Enter the submenu 'Archive' by pressing the tab 'Arch'.
The following screen is displayed:



In the screen 'Archive' the last archiving operation date for each kind of archive is displayed.

	No archive needed.
	Data needs to be archived. An archive is required when the last archive of a category dates from more than 1 month or according to different criteria for each category.

If a message is displayed in the status area that an archiving is necessary, you have several options:

1. Create an archive.

Archives can be created completely or partially .

2. Press 'Reset' , if you don't want to create an archive at this time.

- The archive requirement message is deleted in the status area but is displayed again when the instrument is switched on the next time.

9. Archive

Archives can be created for the following system settings:

9.1.1 Archive ‘Software-Settings’

All information about the actual configuration of the scil Vet abc Plus⁺ is saved in the archive ‘Software-Settings.’ This data can be stored on the USB key.

All settings can be restored by importing them from the USB key.

After each modification of software-settings the instrument will request the user create this archive.

Setting archives can be created only in the user profile ‘SCIENTIST’.

9.1.2 Archive ‘Analyzer Settings’

All analyzer setting information is saved in the archive ‘Analyzer settings.’

This data can be stored on the USB key. All analyzer settings can be restored by importing them from the USB key.

Only users with the profile ‘SCIENTIST’ can create the archive ‘Analyzer-settings.’

9.1.3 Archive ‘Protocol’ (Prt.)

All information about alarms and the analysis list of the scil Vet abc Plus⁺ is saved in the archive ‘Protocol.’

This data can be stored on the USB key. All data can be accessed from the technical service section and allows precise analysis of diagnostic errors.

The scil Vet abc Plus⁺ requires this archive be created at intervals of 4 weeks.

9.1.4 Archive 'QC'

All results from control analyses on the scil Vet abc Plus⁺ are saved in the archive 'QC'.

This data can be stored on the USB key. The scil Vet abc Plus⁺ will ask to create this archive if a new QC-Lot was stored or a new QC-Measurement was performed.

The QC-results are saved in the QC-Archive as an .xml-file. To view this data the special viewer software is needed. The viewer software, which is included with the scil Vet abc Plus+ Flashdrive, should be installed on your PC.



Advanced information about the viewer software can be found on page 9_5.

9.1.5 Archive 'Analyze'

In the archive 'Analyze' all patient results are saved.

This data can be stored on the USB key.

The scil Vet abc Plus⁺ requires creation of an archive if more than 990 results are listed in the history.

The patient results are saved in the archive 'Analyze' as an .xml-file. The .xml-files will be subsumed in a .tar-file.

Special viewer software is requested in the archive 'QC'. The viewer software is included with the scil Vet abc Plus⁺ and should be installed on your PC.

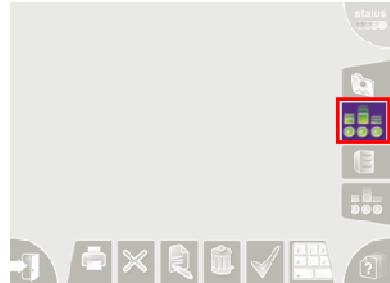


Advanced information about the viewer software can be found on page 9_5.

9. Archive

9.2 Creating an Archive

13. Enter the menu 'Maintenance' by pressing the corresponding main menu button.
 14. Enter the submenu 'Archive' by pressing the tab 'Arch'.
- The following screen is displayed:



Archives are designated with the symbol  when archiving via USB key is requested.

15. Activate the files by pressing the according radio button, for example 'Software-Settings'.
16. Press  to export the data to the USB key.

The following dialog box is displayed:

*'Please insert your USB-key into the front slot of the instrument.
Select "OK" to continue.'*

17. Insert the USB key into the front slot of the instrument.
Press  to start the process.

Repeat this procedure for all archives designated with symbol .



9.3 Access Archive Results with the Viewer Software 'MICROS ES-ESV60'

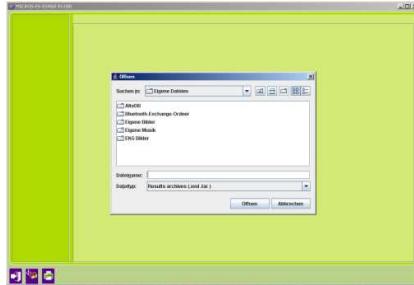
9.3.1 Installation of the Viewer software

1. Insert the provided Flash Drive into your computer.
2. Double click on NM_viewerV1101.exe.
3. Proceed with installation instructions to install viewer software on your computer.
4. Once the viewer installation is completed, the viewer icon is displayed on your computer desktop.

9. Archive

9.3.2 Read Results

1. Double-click on the viewer icon ‘Viewer MICROS ES-ESV60’ to open the viewer.
2. The following window opens:



It allows the user to select the archive files to open on the computer.

3. Select the archive file from the Explorer and open it.
 - Result archives are saved as .tar files,
Ex. “ar-904EVOH00034-result-20090716121005.tar”.
 - QC archives are saved as .xml files,
Ex. “ar-812EVOH00073-controls-20090318164150.xml”.
4. The following window opens:



All results that are saved in the open archive file are listed on the left side.

Click on the result in the list to open it.

9. Archive



Additional Functions:

1. Click on to open another file.
2. Click on to print the result.
3. Click on to quit the program.



10. Species Management

The scil Vet abc Plus⁺ comes with the standard settings installed for dog, cat, horse, pig, sheep, cattle, rabbit, mouse and rat.

The order of the animal icons in the screen 'Species Selection' can be changed.

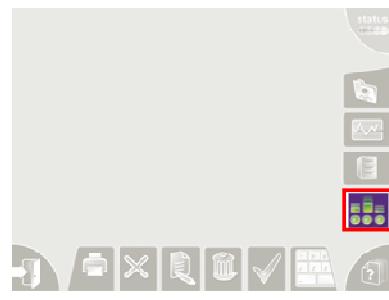
Species that are not in use can be hidden or deleted.

10.1 Change Default Species

'Dog' is set up as default species.

Default species can be changed in the screen 'Maintenance'.

1. Select the menu 'Maintenance' with the related main menu button.
2. Select the screen 'Settings' and press the tab 'Analysis'.
3. Press the radio box 'Species'.
4. Select the default species in the matrix.
5. Press  to define the default species.



Additional Functions:

1. Press  to delete a species.
2. Press  to change the species order in the screen 'Species selection'.
3. Press  to import new species.

10.2 Change the Order of the Species

1. Choose the species whose location you wish to move from the species list with the arrow keys.
2. Press
3. The 'Order species' screen is displayed:



Button Description:

Button	Description
	The position is already used by the selected species.
	The position is available.
	The position is already used for another species.
	The position is selected.



4. Remove the selected species with an available button.
5. Press to remove the selected animals.
6. Repeat step 1-5 for all species to remove.

Additional Function:

1. Press to hide species.

11. Reference Values

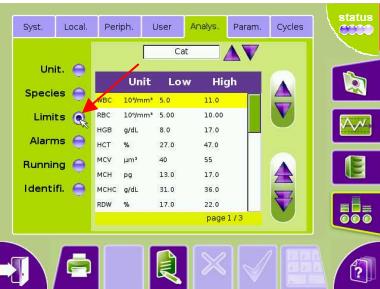
11.1 Modification of the Reference Values

The manufacture's reference values can be changed by the user.

Note: The reference values can only be modified by users with the profile 'SCIENTIST'.

1. Select the menu 'Maintenance' with the corresponding main menu button.
2. Select the sub-menu 'Settings' and press the tab 'Analysis'.
3. Press the radio button 'Limit'.
4. Select the species with the arrow keys

5. Press  to change the reference range.
6. Press  and enter the reference ranges with the internal keyboard.

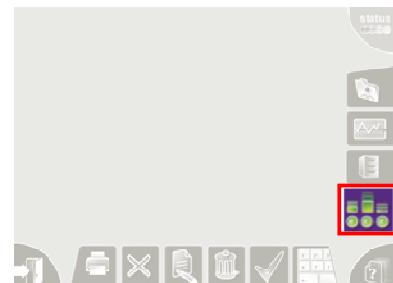
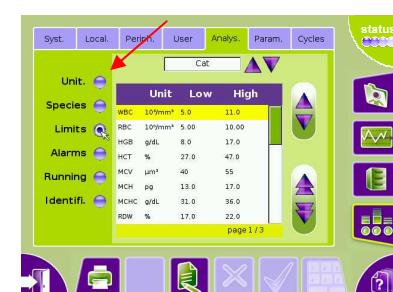
7. Press  to confirm new data.

8. Press  to quit the screen.
9. Press  to enter.


11.2 Changing the Units of Measurements

The scil Vet abc Plus⁺ presents the results of the measurements in conventional units. This setup can be changed by the user into SI-units if desired.

The Units can only be changed in the user profile 'SCIENTIST'.

1. Select with the corresponding main menu button 'Maintenance'.
2. Select the sub-menu 'Settings' and press the tab 'Analysis'.
3. Press the radio button 'Units'.
4. Press  to change the units.
5. Move through the unit options by using the arrow-keys.

Species	Unit...	Low	High
WBC	10/mm ³	5.0	11.0
RBC	10/mm ³	5.00	10.00
HGB	g/dL	8.0	17.0
HCT	%	27.0	47.0
MCV	μm ³	40	55
MCH	pg	13.0	17.0
MCHC	g/dL	31.0	36.0
RDW	%	17.0	22.0

page 1/3

11. Reference Values



You can choose between the following options:

- Standard
- SI
- International
- Japanese

Unit Configurations

Parameter	Standard	International	mmol	Japan
WBC	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^2/\text{mm}^3$
LYM %	%	%	%	%
LYM #	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^2/\text{mm}^3$
MON %	%	%	%	%
MON #	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^2/\text{mm}^3$
GRA %	%	%	%	%
GRA #	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^2/\text{mm}^3$
EOS %	%	%	%	%
EOS #	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^2/\text{mm}^3$
RBC	$10^6/\text{mm}^3$	$10^{12}/\text{l}$	$10^{12}/\text{l}$	$10^4/\text{mm}^3$
HGB	g/dl	g/l	mmol/l	g/dl
HCT	%	l/l	l/l	%
MCV	μm^3	fL	fL	μm^3
MCH	pg	pg	fmol	pg
MCHC	g/dl	g/l	mmol/l	g/dl
RDW	%	%	%	%
PLT	$10^3/\text{mm}^3$	$10^9/\text{l}$	$10^9/\text{l}$	$10^4/\text{mm}^3$
MPV	μm^3	fL	fL	μm^3

6. Press to enter.

12. Maintenance

One of the principal factors for accurate and reliable results is a well maintained instrument. This chapter will describe the necessary maintenance and cleaning procedures.

12.1 Daily Maintenance

Following procedures are required daily, to maintain optimum performance of the scil Vet abc Plus⁺.

12.1.1 Startup Cycle

At the beginning of each working day, a startup cycle must be performed. The scil Vet abc Plus⁺ is programmed to perform the startup cycle automatically after the instrument is switched on. During this cycle, the mixing chambers and the tubing system are rinsed with fresh reagents. Following the start up cycle, the scil Vet abc Plus⁺ performs an internal quality control.

During the start-up cycle, the following message appears:

'Startup cycle is being performed, please wait.'

The startup cycle takes approx. 2 minutes. At the end, the result of the blank value measurement is displayed.

Press  to confirm.

The results of the startup must be within the ranges mentioned below in order to be accepted by the instrument:

WBC <0.3 x 10³/mm³
RBC <0.02 x 10³/mm³
HGB < 0.3 g/dl
PLT <10 x 10⁶/mm³

If the result exceeds the limits, the message is displayed:

'Startup failed.'



Advanced information about troubleshooting can be found in chapter 13 starting on page 13_1.

An alarm is activated and the status button will blink in orange.
The startup cycle must be repeated to run an analysis with the scil
Vet abc Plus+.

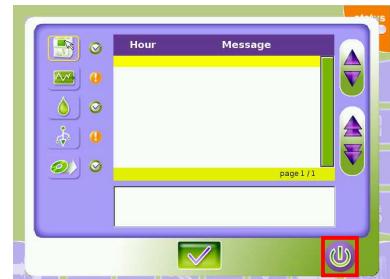


12.1.1 1. Repeat Startup Cycle

1. Press  to display the screen 'Status'.
2. Press the start button  to repeat the startup cycle manually.

The following message is displayed:

'Startup cycle is being performed, please wait.'



 advanced
information about trouble
shooting can be found in
chapter 13 starting on page
13_1.

12.1.2 Shutdown cycle

At the end of each working week, the scil Vet abc Plus⁺ must perform a shutdown cycle. The analyzer may remain on throughout the week. This shutdown cycle is rinsing the analyzer and prevents debris in the tubing system. The scil Vet abc Plus⁺ should never be switched off without performing the shutdown cycle.

1. Press  . The shutdown screen is displayed.
2. Press the radio button  to activate the option 'Shutdown'.
3. Press  to start the shutdown cycle.

The scil Vet abc Plus⁺ performs automatically a shutdown cycle. The followings message is displayed:



'Shutdown is being performed, please wait.'

The shutdown cycle is rinsing with the proteolytic cleaning reagent (contained in the reagent pack) into the measuring chambers. Protein debris in the chambers and in the tubing are peeled off and will be washed out with the next startup cycle. The shutdown takes approximately 1 minute.

At the end, the following message is displayed:

'Switch the analyzer off.'

4. Switch off the analyzer with power switch on back of the instrument.

12.2 Periodic Maintenance

The following service functions are available to clean and check the instrument.

From the functions listed, only the concentrated cleaning must be performed by the user regularly.

All other functions are conducted only upon request of technical service and can be selected like the function 'Concentrated Cleaning' at the main menu 'Maintenance'.



12.2.1 Prime all Reagents

The mixing chambers and the tubing system are rinsed with this function.

 Perform this step
only upon request of
technical service.

12.2.2 Backflush

Clogged mixing chambers are cleaned with this function.

 Perform this step
only upon request of
technical service.

12.2.3 Drain the Chamber

This service function flushes remaining waste from the chambers out of the instrument.



Perform this step always before shipping this analyzer. The exact instructions you will find on an information sheet from the technical service.

12.2.4 Automatic Cleaning

An automatic cleaning cycle can be run at any time when the user wishes to clean the instrument.



The scil Vet abc Plus⁺ performs this service automatically after 50 analyses. Select this function only upon request of technical service.

12.3 Concentrated Cleaning

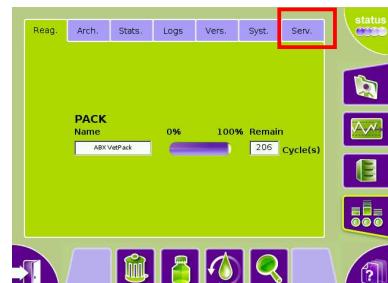
A thorough cleaning of the WBC and the RBC chambers is performed with the cleaning reagent Minoclair in this function. To perform a concentrated cleaning, perform the following steps:

 We recommend a concentrated cleaning be performed at the end of each week before shutdown.

1. Press  to access the menu 'Maintenance'



2. Press the tab 'Service' to access the Service menu.



3. Press  to access the menu 'Maintenance Functions'.



The register 'Hydrau.' is displayed.



4. Activate the radio button 'Concentrated Cleaning' and press  to start the cycle.

Please follow the instructions on the display and confirm each step by pressing the button .

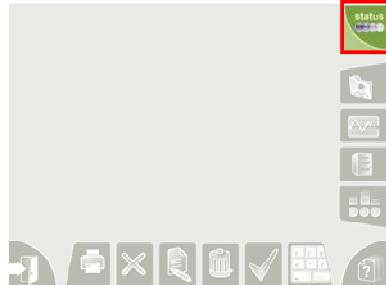
The concentrated cleaning takes 10 minutes. Perform a startup cycle to complete the concentrated cleaning; afterwards you can analyze patient samples as usual.



13. Troubleshooting

This chapter describes different error messages and alarms the scil Vet abc Plus⁺ might show and explains corrective actions.

With the status-button  the menu 'Status' is opened. In this screen you will be informed about the general status of the system, messages and corrective actions.



13.1 'Status' Alarms

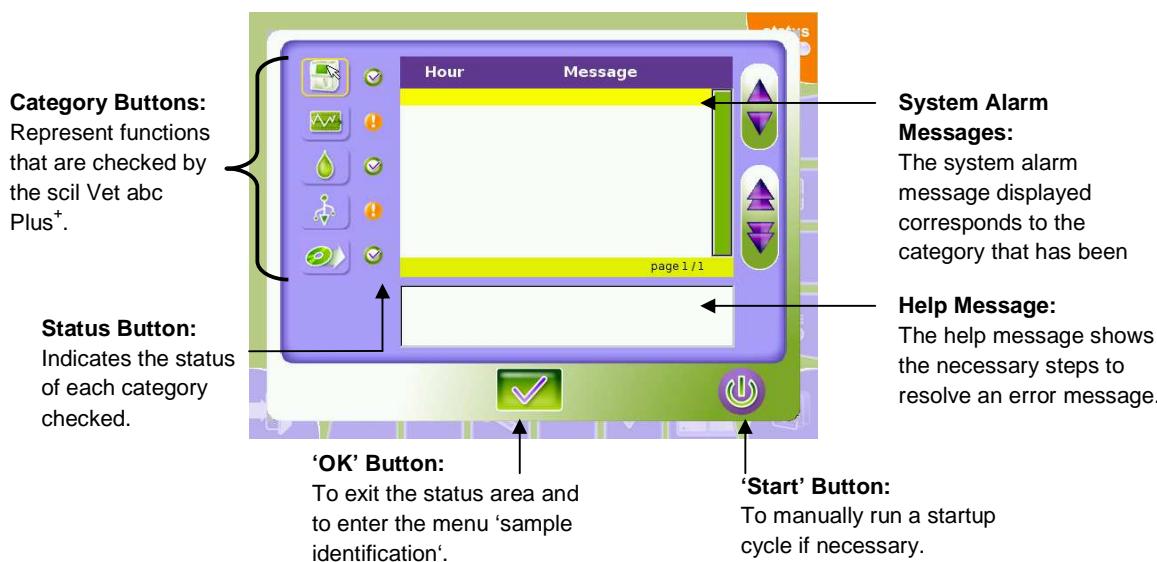
Depending on the status of the instrument, the status button will show different colors:

Status	Color	Description
	Green	The instrument is running correctly.
	Orange	An alarm has been raised but does not lock the instrument. Analysis can be run.
	Red	An alarm has been raised and locks the instrument. Analysis cannot be run except QC.

The status button blinks if the instrument gives an alarm.

In this case press  to display the area 'Status'.

The following screen opens:



The symbol will change depending on the instrument status:

Status	Icon	Description
OK		No alarm has been detected in this category.
ALARM		An alarm has been detected in this category on at least 1 element checked by the instrument: the instrument is not locked. Analysis can be run.
LOCK		A locking alarm has been detected in this category on at least 1 element checked by the instrument: the instrument is locked. Analysis cannot be run except QC.

The system alarms are classified in five categories.

Press the corresponding category button to display the system alarm messages.

The selected category button is framed with a yellow line.

13.2 Instrument Alarms



Instrument alarms are displayed when a cycle fails.

System alarm message	Help message	Possible cause / Corrective action
Startup cycle failed	Run a Startup cycle directly from this status screen.	The cycle has not been able to be completely performed or no result received or no previous result to display: - Run a startup cycle by pressing the " Startup " button.
Invalid startup cycle	Run a Startup cycle directly from this status screen.	The startup cycle has correctly carried out, but the result of the blank cycle is out of acceptable limits or the delay between 2 analyses (X hours adjustable) is exceeded or the technician asks for a restart without Shutdown: - Run a startup cycle by pressing the " Startup " button.
Cycle cancelled by user	Run a Startup cycle directly from this status screen.	- Run a startup cycle by pressing the " Startup " button. - Consult " Logs " tab
Critical cycle error	Run a Startup cycle directly from this status screen.	- Run a startup cycle by pressing the " Startup " button.
Analyser connection failed	Restart the analyser (Logout screen / Shutdown / Restart).	Connection not initialized between analyser and application (analyser do not answer or analyser version is not compatible with the application version): - Restart the instrument. - Check version numbers - Contact your local Technical Support Representative for assistance.
Analyser communication failed	Run a Startup cycle directly from this status screen.	A communication error with the analyser occurred: - Run a startup cycle by pressing the " Startup " button.
Reagent temperature error.	Run a Startup cycle directly from this status screen.	A reagent is not at the operating temperature: - Run a startup cycle by pressing the " Startup " button. - Replace the pack.

13.3 QC-Alarms



QC-Alarms are displayed when an error related to an analysis or management of a quality control occurs.

System alarm message	Help message	Possible cause / Corrective action
Invalid QC "lot number"	Check the last QC "lot number" result in QC menu and rerun the appropriate control if necessary.	A QC analysis is out of normality limits: - Check the last control results. - Run an analysis for this control - Replace the control lot
Inter QC time limit "lot number"	Inter QC "lot number" time set elapsed. You should run the appropriate control.	The inter QC time limit set for a control is elapsed: - Run an analysis for this control
XB drift	Check XB data in QC menu/XB screen.	A statistic dot is out of limits: - Check XB data.

13.4 Reagent Alarms



Reagent alarms are displayed when an error related to the reagent occurred.

System alarm message	Help message	Possible cause / Corrective action
Reagent PACK expired.	Check PACK expiration date in Maintenance menu / Reagent screen. If necessary, replace the appropriate reagent by another lot number, run priming cycle from reagent screen and run a Startup cycle.	- Replace the reagent pack.
Low reagent level PACK	Check PACK level in Maintenance menu / Reagent screen. If necessary, replace the appropriate reagent, run priming cycle from reagent screen and run a Startup cycle.	Reagent pack is almost empty (counter of tests lower than 10): - Replace the reagent pack.
Reagent empty	Check level in Maintenance menu / Reagent screen. If necessary, replace the appropriate reagent, run priming cycle from reagent screen and run a Startup cycle.	- Replace the reagent pack.

13.5 Archive Alarms



Archive alarms are displayed when an archive setting is requested.

System alarm message	Help message	Possible cause / Corrective action
settings archive should be archived.	Archive the settings category in the Maintenance menu / Archives screen by connecting a USB key on the analyser.	- Create archive for the software settings.
analyser archive should be archived.	Archive the analyser category in the Maintenance menu / Archives screen by connecting a USB key on the analyser.	- Create archive for the Analyser settings.
logs archive should be archived.	Archive the logs category in the Maintenance menu / Archives screen by connecting a USB key on the analyser.	- Create archive for the Logs.
qc archive should be archived.	Archive the qc category in the Maintenance menu / Archives screen by connecting a USB key on the analyser.	- Create archive for the QC.
analysis archive should be archived.	Archive the analysis category in the Maintenance menu / Archives screen by connecting a USB key on the analyser.	- Create archive for the Patient results.

13.6 Application Alarms



Application alarms are displayed when an application error occurred.

System alarm message	Help message	Possible cause / Corrective action
Application error	Restart the analyser (Logout screen / Shutdown / Restart).	A software problem occurs during data saving or file opening for example: - Restart the instrument.
LIS connection failed	Check the connection with the LIS or its availability or its configuration.	A result cannot be translated to the LIS: - Check if LIS connection cable is correctly plugged. - Restart the instrument. - Contact your local Technical Support Representative for assistance.
Printer queue full	More than 3 print jobs pending. Please wait or check the status of your printer.	- Check if printer is on line. If not, switch it on.
Print error	An error occurred during the last print job. Check the status of your printer and consult the error log.	- Check if instrument and printer cables are correctly plugged. - Check if printer is on line. If not, switch it on. - Check if there is enough paper. - Check printer settings

14. Peripheral Devices

14.1 Data Transfer to Lab Software

The scil Vet abc Plus⁺ is set up with an automatic transfer of the patient data and histograms to the lab software from factory side.

14.1.1 Modify the Settings of the Data Transfer

In cases where transfer of the data to the lab software is not desired, the following modifications are necessary.
These modifications are only possible if the user is logged in as 'SCIENTIST'.

1. Press  to go to the main menu 'Maintenance'.



2. Press the tab 'Serv' to open the service menu.



3. Press  to go to the sub menu 'Settings'.



14. Peripheral Devices

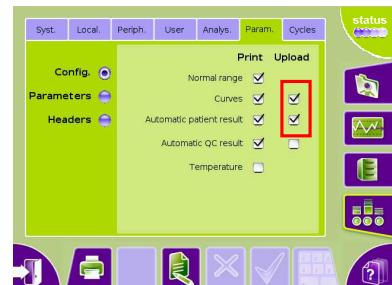


4. Press the tab 'Param' to open the sub menu 'Parameter Settings'.

5. Press to modify the settings.

6. Deactivate all radio buttons in the column 'Upload'.

This deactivates the automatic transfer of the results to the lab information system or the lab software.



7. Press to confirm the selected settings.

14.1.2 Modify the Communication Settings

Via the communication settings results can be transferred to a lab information system, an internal computer network or a network printer.

The data transfer to the lab software works via serial interface RS232 or via TCP-IP-network interface. From the factory side the communication setting RS232 is activated.

If the data from the scil Vet abc Plus⁺ is going to be transferred via the TCP-IP network interface instead of the RS232 interface, the configuration of the communication settings of the instrument needs to be changed.



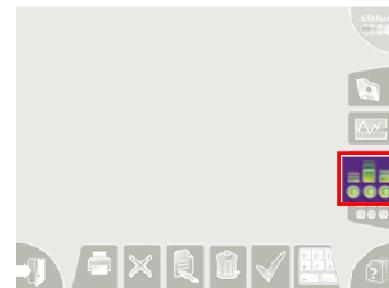
The communication settings should only be modified by a technician of the provider of the lab software.

These modifications can only be made under the user log-in 'TECH'.

The log-in as 'TECH' requires a password. Please contact scil animal care company to receive the password.

Please follow these steps:

1. Press to enter the main menu 'Maintenance'.



2. Press the tab 'Serv' to enter the service menu.



3. Press to enter the sub menu 'Settings'.



4. Press the tab 'Periph' to enter the sub menu 'Peripheral Settings'

5. Activate the radio button 'LIS'.

6. Press to modify the settings.

7. Use in the line 'Interface' to change the settings from RS232 to TCP. The settings of all other lines do not need to be changed.

8. Press to confirm your selection.
With this you enter the screen 'TCP Interface'.

9. Enter the Host-IP-address of the computer that should be connected in the second line by using the internal keyboard.

The port number in the third line is 4148 set as default and cannot be changed.

10. Press to confirm.

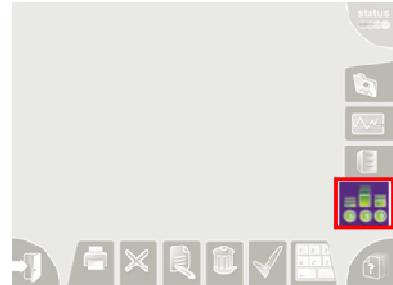


14.2 Printer Settings

It is possible to connect various local printers or a network printer to the scil Vet abc Plus⁺. From the manufacturer the system is set to connect with a LaserJet printer.

14.2.1 Modify the Printer Settings

1. Press  to enter the main menu 'Maintenance'.



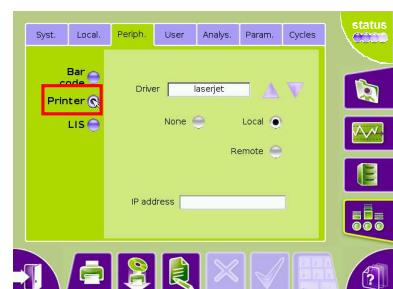
2. Press the tab 'Serv' to enter the service menu.



3. Press  to go to the sub menu 'Settings'.



4. Press the tab 'Periph' to enter the sub menu 'Peripheral Settings'
5. Activate the radio button 'Printer'.
6. Press  to modify the settings.



7. Activate one of the following radio buttons depending on the desired settings:

- **None**



There is no printer connected to the scil Vet abc Plus⁺. Result information is not printed.

- **Local**



There is a local printer connected to the scil Vet abc Plus⁺. Select in the combo box the printer type from the list by using the arrow buttons.

- **Remote**



There is a network printer connected to the scil Vet abc Plus⁺. Enter the IP address of the network printer 'Share name @ IP-address' in the combo box 'IP' via an external keyboard.

8. Press  to confirm the selection.

14.3 Results Header Settings

The 'Header' screen allows to set the result printings. It is possible to change the header of the printout and the number of printouts. Additional an individual logo can be uploaded on the scil Vet abc Plus⁺, which is displayed in the header of each printout.

14.3.1 Change the Header Settings

1. Press  to enter the main menu 'Maintenance'.
2. Press the tab 'Serv' to enter the service menu.
3. Press  to go to the sub menu 'Settings'.
4. Press the tab 'Param.' to enter the sub menu 'Parameter Settings'.
5. Press the radio button 'Header'
6. Press  to change the settings.
7. Press  to open the internal keyboard.
8. Type the header information in the left, center and right fields. Maximum of 30 characters for each field.
9. Press  to enter.
10. Press  to quit the screen.
11. Use arrow buttons to select the number of copies to print.
12. Press  to confirm.



14.3.2 Import a Logo

1. Press the radio button ‘Header’.
2. Press  to paste a logo with the following name “report-logo.gif”.

Maximal size: 300 x 78 px (width x height)

The following message is displayed:

‘Insert USB key.’



3. Insert the USB key in the front slot of the instrument.
4. Press  to start the import.
5. Press  to change the settings.
6. Use the arrow buttons to select the logo position.
7. Press  to confirm.

15. Technical Data

Species: dog, cat, horse, pig, sheep, cattle, rabbit, rat, mouse

Parameters: leukocytes, erythrocytes, thrombocytes, hemoglobin, hematocrit, RDW, MCV, MCH, MCHC, MPV

for dog, cat, and horse additionally:
lymphocytes % and #, monocytes % and #,
granulocytes % and #, eosinophils % and #

3 histograms: leukocytes, erythrocytes and thrombocytes

Sample volume: 10µl Analyze-test volume

Sample time: 60 seconds

Principle: Electrical impedance and spectrophotometry

Data processing

Data storage: 1000 results

Printout: USB Laser printer

Data interface: RS 232-serial, Ethernet

Technical data

Display: 8.4 inch touch screen

Dimensions: 360 x 360 x 430 mm (B x T x H)

Weight: approx. 14 kg



Delivery Contents

- scil Vet abc Plus⁺ Hematology Analyzer
- Flash Drive

With the flash drive, the different archives can be exported. In addition, the target values and lot information from the quality controls can be imported in the scil Vet abc Plus⁺. The flash drive also contains the viewer software that can be installed on your PC and allows examination of patient results and QC results.

- User Manual
- Power cord